REMARKS

I. INTRODUCTION

In response to the Office Action dated September 9, 2004, claims 28-30 have been cancelled, and new claims 36-39 have been added. Claims 21-27 and 32-39 remain in the application. Entry of these amendments, and reconsideration of the application, as amended, is requested.

II. CLAIM AMENDMENTS

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the invention, and do not introduce new matter or raise new issues. Claims 36 and 37 have been amended to limit the synthetic inhibitor molecule to the oligonucleotide sequence common to the GC-Box sequences illustrated in Figure 1B. This amendment is supported by claims 10 and 14 of the original parent application and included at pages 82-83 of the present application as originally filed, as well as by Figure 1B. These portions of the application also support new claims 38 and 39, which further limit the synthetic inhibitor molecule to require one of the GC-Box sequences illustrated in Figure 1B.

New claims 36-39 were not earlier presented merely because Applicants' discovery should not be limited to the use of the preferred synthetic inhibitor molecules recited in Figure 1B, as other inhibitor molecules containing a C-5 methylcytosine are useful in the method of the invention. In order to facilitate prosecution, however, Applicants have opted to add claims limiting the method to use of the preferred inhibitors. Applicants note that all of the embodiments recited in new claims 36-39 comprise the nucleotide sequence of SEQ ID NO: 15.

Entry of these amendments is respectfully requested.

III. PRIOR ART REJECTIONS

At page 2 of the Office Action, claims 21, 24 and 33-35 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by Sufrin. At page 3 of the Office Action, claims 22-23, 25-27 and 32 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by Sufrin.

Applicants respectfully traverse these rejections.

Applicants' claims require (a) inhibiting methylation of DNA comprising (b) contacting DCMTase with a synthetic inhibitor molecule (c) so as to form an enzyme/synthetic inhibitor

molecule complex in the presence of DNA wherein (d) the inhibitor molecule comprises a C-5 methylcytosine molecule which (e) binds to an allosteric site on the DCMTase, which inhibits methyltransferase activity. The Patent Office has not shown that all of these elements are met by the cited reference. Sufrin fails to teach (a) inhibition (as it is understood by those skilled in the art), (c) formation of an enzyme/synthetic inhibitor complex in the presence of DNA, or (e) binding to an allosteric site on the DCMTase.

In addition to not teaching inhibition via binding to an allosteric site, the prior art does not teach or suggest contacting the DCMTase enzyme with the synthetic inhibitor molecule in the presence of DNA. Instead, Sufrin teaches substrates for the enzyme and compares the inherent activity of the different substrates. (See col. 4, lines 13-25, identifying the disclosed analogs as substrates that have the potential to be methylated by DNA methyltransferases.) Their "inhibition" is merely comparatively less activity when comparing one substrate to another. This is not the same as using an inhibitor molecule to inhibit the ability of the enzyme to methylate a (separate) DNA molecule.

The Examiner appears to be treating the DNA substrate of Sufrin as simultaneously satisfying two separate elements of Applicants' claims: the synthetic inhibitor and the DNA. The method claimed by Applicants requires contacting the enzyme with the inhibitor to form an enzyme/inhibitor complex in the presence of the DNA (substrate) in order to inhibit methylation of that DNA (substrate). In contrast, Sufrin teaches only contacting the enzyme with a substrate. Because Sufrin fails to teach each element of Applicants' claimed method, Sufrin does not anticipate the invention and the rejection based on the prior art should be withdrawn.

IV. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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